



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/657,971    09/08/00    SUZUKI

N    35.C11969 RE

005514    IM51/0228  
FITZPATRICK CELLA HARPER & SCINTO  
30 ROCKEFELLER PLAZA  
NEW YORK NY 10112

EXAMINER

ALEJANDRO MILLERO I

ART UNIT

PAPER NUMBER

1763

DATE MAILED:

02/28/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/657,971

Applicant(s)

SUZUKI, NOBUMASA

Examiner

Luz L. Alejandro

Art Unit

1763

-- **The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-98 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-98 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 08/806070.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1,3,5.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☒ Other: *Statement under 37 CFR 3.73(b) form*.

## **DETAILED ACTION**

### ***Reissue Applications***

This reissue application was filed without the required offer to surrender the original patent or, if the original is lost or inaccessible, an affidavit or declaration to that effect. The original patent, or an affidavit or declaration as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.

The reissue oath/declaration filed with this application is defective (see 37 CFR 1.175 and MPEP § 1414) because of the following: the oath or declaration must state that the person signing has reviewed and understands the contents of the specification, including the claims, as amended by any amendment specifically referred to in the oath or declaration as required by 37 CFR 1.63(b)(1).

Claims 1-98 are rejected as being based upon a defective reissue declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defect(s) in the declaration is set forth in the discussion above in this Office action.

### ***Specification***

A substitute specification excluding the claims is required pursuant to 37 CFR 1.125(a) because some of the changes included in the Certificate of Correction of the original

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patent were not included in the reissue specification, for example, at col. 3-line 16, "thus" should read -- the thus --. Certificate of Correction changes must be entered in the reissue application without bracketing or underlining. This will incorporate the changes as part of the original patent and not as changes in the reissue. A clean copy of the specification with the Certificate of Correction changes incorporated therein is requested.

A substitute specification filed under 37 CFR 1.125(a) must only contain subject matter from the original specification and any previously entered amendment under 37 CFR 1.121. If the substitute specification contains additional subject matter not of record, the substitute specification must be filed under 37 CFR 1.125(b) and must be accompanied by: 1) a statement that the substitute specification contains no new matter; and 2) a marked-up copy showing the amendments to be made via the substitute specification relative to the specification at the time the substitute specification is filed.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19-25, 50-98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki, JP 7-90591 in view of Inoue, JP 5-62796 and Watanabe et al. JP 7-263186.

Suzuki shows the invention as claimed including a microwave plasma processing apparatus, in which a plasma process is performed, comprising: a plasma generation chamber 1101, separated from ambient air by a first dielectric material 1102; a processing chamber 1111 connected to said plasma generation chamber; means 1113 for supporting a substrate 1112 to be processed; microwave introduction means utilizing an endless annular wave guide 1103 provided outside the first dielectric material which is provided with plural slots 1107; means 1108 for introducing gas into the plasma generation chamber; means 1115 for introducing gas into the processing chamber; evacuation means 1116 (see figures 9A and 9B).

Suzuki does not expressly disclose that the interior of the wave guide is filled with a second dielectric material which is the same as or different from the first dielectric material. Inoue (figs. 1 and 2 and their descriptions) and Watanabe et al. (figs. 1 and 2 and their descriptions) disclose microwave plasma processing apparatuses similar to the apparatus disclosed by Suzuki, and in which the wave guide is filled with a dielectric material as to generate a uniform density plasma in the plasma generation chamber as disclosed by Inoue (paragraph 0022) and as to make the transmission section of microwaves small and to make small the cut off frequency of the waveguide as disclosed by Watanabe et al. (paragraphs 0004-0011). In view of these disclosures, it would have been obvious to one having ordinary skill in the art at the time the invention

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was made to modify the apparatus disclosed by Suzuki as to further comprise a wave guide filled of dielectric material because in such way a uniform density plasma is generated, therefore the substrate is uniformly processed, to make the transmission section of microwaves small and as to make small the cut off frequency of the wave guide. With respect to claims 72 and 90, note that the first dielectric material is quartz and the second dielectric material can be Teflon, alumina ceramics or quartz (see Watanabe et al. paragraph 0007), therefore the limitation of the claims is met.

Suzuki et al disclose a wave guide having a cylindrical shape and which follows the exterior of the first dielectric material. Suzuki also disclosed: that the wave guide may also be of other shapes such as a disk, a polygon, or the like (paragraph 0018); magnetic field generating means may be further provided to higher the density of plasma (paragraph 0021), such magnetic field generating means capable of generating the claimed magnetic field of claim 74; optical energy source to irradiate the substrate (paragraphs 0038-0039); high frequency supply means connected to the substrate support (paragraph 0041); and wherein film forming and cleaning processes are performed in the apparatus, also with respect to the processes performed in the apparatus noted that the apparatus is capable of performing different kinds of processes depending in the gases utilized.

***Allowable Subject Matter***

Claims 1-18 and 26-49 would be allowable if a corrected declaration is provided.

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***Conclusion***

A form of a Statement Under 37 CFR 3.73 (b) had been attached to this office action, please complete the form and return it with your response as to satisfy with the requirement under 37 CFR 3.73(b).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luz L. Alejandro whose telephone number is 703-305-4545. The examiner can normally be reached on 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3599 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



LLAM  
February 25, 2001



GREGORY MILLS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

**STATEMENT UNDER 37 CFR 3.73(b)**

Applicant/Patent Owner: \_\_\_\_\_

Application No./Patent No.: \_\_\_\_\_ Filed/Issue Date: \_\_\_\_\_

Entitled: \_\_\_\_\_

\_\_\_\_\_, a \_\_\_\_\_,  
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☐ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of an undivided part interest

in the patent application/patent identified above by virtue of either:

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

OR

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

2. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

3. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

☐ Copies of assignments or other documents in the chain of title are attached.

**[NOTE:** A separate copy (i.e., the original assignment document or a true copy of the original document) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the PTO. See MPEP 302-302.8]

The undersigned (whose title is supplied below) is empowered to sign this statement on behalf of the assignee.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Typed or printed name

\_\_\_\_\_  
Title